

tions continued, except for some thawing and freezing, but more moisture was needed in California, parts of the far Southwest, and some Rocky Mountain districts.

Miscellaneous.—Pastures continued mostly in poor condition in the Southeast during the first decade and reports of rather extensive injury to grass and clover were noted from many central sections. The mild weather during this period permitted free ranging of livestock in the northern Great Plains and the range was mostly open in Wyoming. Moisture was insufficient in parts of the central Rocky Mountain region and additional precipitation was needed in some other western areas. Livestock continued to do well generally. During the second decade conditions remained practically unchanged in the Southeast and central sections, but general snow in New Mexico was of benefit. Lambing was progressing satisfactorily in Wyoming, with shearing begun in Arizona. Continued freezing and thawing caused some injury in central sections during the last

decade, but there was slight improvement in the Southeast and reports were mostly favorable in the great western grazing districts.

Continued dry weather was unfavorable for recovery of damaged truck in Florida during the first part of the month, but planting and replanting were active. Truck crops continued poor during the second decade with rainfall needed on Florida uplands, while frost and freezing weather on the 19th and 20th in the northern part of this State cut potatoes to the ground in the Hastings district and damaged truck and melons elsewhere. Winter and spring truck crops made mostly slow growth in the Southern States during the last part of the month, though showers were beneficial locally. The cool weather most of the month was favorable in retarding the unseasonable advance of fruit buds, and trees were largely dormant at the close. Citrus bloom escaped serious injury by the cold weather in Florida and much bloom and new growth were noted at the close of the month.

WEATHER ON THE ATLANTIC AND PACIFIC OCEANS

NORTH ATLANTIC OCEAN

By F. A. YOUNG

February is normally one of the stormiest months of the year over the North Atlantic, and while during the current month the number of days with gales was not far from the normal over the greater part of the ocean, a large number of casualties was reported, not only at sea but also on the European coast.

During the first two decades of the month both the North Atlantic high and Icelandic low were, for the most part, unusually well developed, while the last decade was characterized by sudden changes of pressure in the vicinity of the Azores and anticyclonic conditions over northern Europe.

One unusual feature was the comparatively high force of the northeast trades during both the first and last periods of the month, which will be referred to later.

The number of days with fog was apparently considerably below normal over the entire ocean, except along the American coast between Hatteras and Nantucket and also in the Gulf of Mexico, being reported on five days in both these localities.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (75th meridian), North Atlantic Ocean, February, 1928

	Average pressure	Departure ¹	Highest	Date	Lowest	Date
	Inches	Inch	Inches		Inches	
Belle Isle, Newfoundland.....	29.68	-0.07	30.42	23d.....	29.18	25th. ²
Halifax, Nova Scotia.....	30.01	+0.03	30.62	22d.....	29.44	19th.
Nantucket.....	30.06	0.00	30.66	3d.....	29.36	18th.
Hatteras.....	30.15	+0.02	30.62	22d.....	29.48	18th.
Key West.....	30.10	+0.02	30.32	19th.....	29.96	16th.
New Orleans.....	30.17	+0.07	30.50	19th.....	29.86	13th. ²
Cape Gracias, Honduras.....	29.95	-0.02	30.02	19th. ²	29.88	23d.
Turks Island.....	30.16	+0.06	30.22	20th. ²	30.10	1st. ²
Bermuda.....	30.21	+0.07	30.62	22d.....	29.80	29th.
Horta, Azores.....	30.13	+0.12	30.60	3d.....	29.68	27th.
Lerwick, Shetland Islands.....	29.65	-0.07	30.54	23d.....	28.64	1st.
Valencia, Ireland.....	29.99	+0.09	30.59	22d.....	29.48	10th. ²
London.....	30.10	+0.10	30.57	20th.....	29.26	11th.

¹ From normals shown on H. O. Pilot Chart, based on observations at Greenwich mean noon or 7 a. m. 75th meridian.

² And on other dates.

On the 1st and 2d a low was central off the north coast of Scotland and moderate to strong northerly to

westerly gales prevailed between the 30th meridian and the European coast. From the 3d to the 5th the greater part of the steamer lanes was storm swept, and on the latter date Belle Isle was also near the center of a violent disturbance of limited extent.

From the 5th to 9th the northeast trades were unusually strong, as shown by the report from the Danish M. S. *California*, in table of gales and storms.

From the 6th to 9th westerly gales still prevailed over the middle and eastern sections of the ocean and on the 8th and 9th a fairly well developed cyclonic disturbance was central near 30° N., 45° W., with strong gales near the center. This disturbance moved slowly eastward, and on the 11th a southeast gale was encountered near 25° N., 43° W., as shown by report in table from the Dutch S. S. *Hector*.

On the 11th and 12th winds of hurricane force swept over the northern steamer lanes between the 30th meridian and European coast and considerable damage to shipping was reported, as well as on shore.

On the 13th and 14th a severe disturbance was over the area between the 30th and 50th parallels and the 30th and 65th meridians that reached its greatest intensity on the latter date. On the 15th land stations on the British Isles reported southwest winds of force 7 to 9.

Charts VIII to XI cover the period from the 17th to 20th, inclusive.

On the 22d and 23d a disturbance was over the middle sections of the steamer lanes that by the 24th had increased both in extent and intensity, as on that date it covered the greater part of the region between the Azores and the 50th meridian.

From the 23d to 28th the northeast trades, for the second time during the month, were unusually strong, as shown by report in table from the American S. S. *Atlantic*.

On the 25th and 26th a depression was central near the Azores that moved slowly northeastward and by the end of the month was over the British Isles.

On the 27th gales were reported by a number of vessels in mid-ocean; the storm area increased in extent and by the 28th extended from the 10th to the 40th meridians.

On the 29th a well-developed low of limited extent was central about 250 miles east of Bermuda, as shown by report from the American S. S. *Western Ally*.